What Is Claimed Is:

1. A method of assembling a driveshaft having:

a first attachable part (2) with a first longitudinal axis (A_1) and a first cylindrical receiving face (12);

a second attachable part (3) with a second longitudinal axis (A_2) and a second cylindrical receiving face (13); and

a tube element (43) with a production-caused curvature and a curved center line (M) and a given length (L), the tube element comprising a tube wall (14), a first tube end and a second tube end, wherein between the tube wall (14) and the receiving faces (12, 13) of the attachable parts (2, 3), there are provided radial gaps (15, 16);

the method comprising the following steps:

holding the tube element (4) with two points of its center line (M) on a reference axis (R);

positioning the first attachable part (2) with its first longitudinal axis (A_1) on the reference axis (R), with the first attachable part (2) and the tubular part (4) partially overlapping;

positioning the second attachable part (3) with its second longitudinal axis (A_2) on the reference axis (R), with the second attachable part (3) and the tube element (4) partially overlapping; and

welding the first attachable part (2) and the second attachable part (3) to the tube ends of the tube element (4), with the radial gaps (15, 16) being closed.

2. A method according to claim 1, wherein the tube element (4) is aligned relative to the reference axis (R) in such a way that the ratio of a distance (B) between the points of intersection of the center

line (M) with the reference axis (R) relative to the length (L) of the tube element (4) ranges between approximately 0.5 and 0.75.

3. A method according to claim 2, wherein the tube element (4) is aligned relative to the reference axis (R) in such a way that the ratio of the distance (B) between the points of intersection of the center line (M) with the reference axis (R) relative to the length (L) of the tube element (4) is approximately 0.577.

4. A method according to claim 1, wherein the tube element (4) is aligned relative to the reference axis (R) in such a way that the points of intersection of the center line (M) with the reference axis (R) are positioned axially symmetrically between the attachable parts (2, 3).

5. A method according to claim 1, wherein, with the tube element (4) being held by two points of its center line (M) on the reference axis (R), the radial gaps (15, 16) between the receiving faces (12, 13) of the attachable parts (2, 3) and the tube wall (14), in respect of magnitude, are greater than the axial distance between the reference axis (R) and an axis extending centrally through the tube openings at the tube ends.

6. A method according to claim 1, wherein the welds are produced by laser or plasma welding.

7. A method according to claim 1, wherein the welds are produced, starting in several places simultaneously, curve-like along the annular gaps between the tube wall (14) and the cylindrical receiving faces (12, 13) of the attachable parts (2, 3).

8. A method according to claim 7, wherein the welds are produced in two diametrically opposed places simultaneously.

9. A driveshaft comprising a first attachable part (2) with a first longitudinal axis (A_1), a second attachable part (3) with a second longitudinal axis (A_2), and a tube element (4) with a production-caused curvature and a curved center line (M), wherein the first attachable part (2) with its first longitudinal axis (A_1) on a reference axis (R), the second attachable part (3) with its second longitudinal axis (A_2) on the reference axis (R) and the tube element (4) with its center line (M) intersecting the reference axis (R) in two points, are aligned relative to one another and arranged so as to partially axially overlap, and are connected to one another by welds.

10. A driveshaft according to claim 9, wherein the points of intersection of the center line (M) with the reference axis (R) are positioned axially symmetrically between the attachable parts (2, 3).

11. A driveshaft according to claim 9, wherein at lest one of the first attachable part (2) and the second attachable part (3) comprises an outer receiving face (12, 13) with an outer diameter (D_1, D_2) which is smaller than the inner diameter (d_R) of the tube element.

12. A driveshaft according to claim 9, wherein at least one of the first attachable part (2) and the second attachable part (3) comprises an inner receiving face (13) with an inner diameter (d_2) which is greater than the outer diameter (D_R) of the tube element (4).

13. An apparatus for joining a driveshaft having a first attachable part (2) with a first longitudinal axis (A_1), a second attachable part (3) with a second longitudinal axis (A_2) and a tube element (4) with a production-caused curvature and a curved center line (M) and a given length (L), the apparatus comprising a first holding element (17) for coaxially holding the first attachable part (2) with its first longitudinal axis (A_1) on a reference axis (R), a second holding element (18) for coaxially holding the second attachable part (3) with its second longitudinal axis (A_2) on the reference axis (R), and tensioning elements (19, 20) for holding the tube element (4) with two points of its central line (M) on the reference axis (R), wherein the two tensioning elements (19, 20) are arranged between the two holding elements (17, 18).

14. An apparatus according to claim 13, wherein the tensioning elements (19, 20) are arranged at a distance (B) from one another which is greater than 0.5 times, and smaller than 0.75 times, the length (L) of the tube element (4).

15. An apparatus according to claim 14, wherein the tensioning elements (19, 20) are arranged at a distance (B) from one another which equals approximately 0.577 times the length (L) of the tube element (4).

16. An apparatus according to claim 13, wherein the tensioning elements (19, 20) each comprise three jaws (21) which each are arranged equi-distant from one another and from the reference axis (R).

17. An apparatus according to claim 16, wherein the jaws (21) of the tensioning elements (19, 20) are each radially displaceable relative to the reference axis (R).

18. An apparatus according to claim 16 or 17, wherein the jaws (21) are roller-shaped and are positioned on axes which extend parallel to the reference axis (R).

19. An apparatus according to claim 13, wherein the tensioning elements (19, 20) are axially displaceable.

20. A device according to claim 13, wherein the tensioning elements (19, 20) are arranged axially symmetrically between the holding elements (17, 18).